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10/10/01

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1. A packet communication method for a network having a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that said bus bridge establishes a connection between a first channel used in a first bus system of said plurality of bus systems for transmission of packets to a first multicast address and a second channel used in a second bus system of said plurality of bus systems for transmission of packets to a second multicast address if said first and second multicast addresses are equal to each other.

2. A packet communication method for a network having a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that

said at least one node attached to each of said plurality of bus systems, when initiating a multicast packet transmission to a multicast group of the bus system, acquires a channel to be used for said multicast packet transmission and broadcasts a message pertaining to said channel; and

said at least one bus bridge establishes a connection between channels acquired for different bus systems when said message is received from each of said different bus systems.

3. A packet communication method for a network having an intermediate bus system connected between first and second bus systems by first and second bus bridges, wherein at least one node is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said bus systems acquires a channel to be used for multicast packet transmission and broadcasts a message pertaining to said channel and a multicast group when initiating a multicast packet transmission to said multicast group;

said first bus bridge acquires an interconnection channel if there is no node in said intermediate bus system participating in said multicast group and if two of said message having an identical multicast address are received, one from said first bus system and the other from said second bus system, broadcasts a message pertaining to said interconnection channel and said multicast group and connects a first end of the interconnection channel to the channel acquired for said first bus system; and

said second bus bridge connects a second end of the interconnection channel to the channel acquired for the second bus system when said message is received from said first bus bridge.

4. A packet communication method for a network having a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said plurality of bus systems

acquires a first channel to be used for multicast packet transmission and broadcasts a first message containing information pertaining to said first channel and a multicast group when initiating a multicast packet transmission to said multicast group;

said at least one node on each of said bus systems when operating as a receive-only node acquires a second channel if said first message is received when the bus system of the receive-only node has no node responsible for channel acquisition, and broadcasts a second message pertaining to said second channel and said multicast group; and

said at least one bus bridge establishes an inter-channel connection between said first and second channels when said first and second messages are received.

5. The packet communication method of claim 3, wherein said first bus bridge is determined as a bridge responsible for acquisition of said interconnection channel depending on relative values of identifiers assigned to said first and second bus bridges.

6. The packet communication method of claim 3, wherein said first bus bridge is determined as a bridge responsible for acquisition of said interconnection channel depending on a random number.

7. A packet communication method for a network comprising a plurality of nodes, first and second bus systems to which said nodes are attached, and a bus bridge for performing a transfer of packets between said first and second bus systems, the method comprising the steps of:

a) acquiring, at a first node attached to said first bus system, a first channel for transmission of packets to a first multicast address and broadcasting a first message pertaining to said first channel and said first multicast address;

b) acquiring, at a second node attached to the second bus system, a second channel for transmission of packets to a second multicast address and broadcasting a second message pertaining to said second channel and said second multicast address; and

c) receiving, at said bus bridge, the first and second messages and establishing a connection between two channels respectively identified by the received messages if the multicast addresses contained therein are equal to each other.

8. A packet communication method for a network comprising first and second bus systems and an intermediate bus system between said first and second bus systems, a plurality of nodes attached to said first, second and intermediate bus systems, and a first bus bridge for performing a transfer of packets between said first and intermediate bus systems, and a second bus bridge for performing a transfer of packets between said intermediate and second bus systems, the method comprising the steps of:

a) acquiring, at a first node attached to said first bus system, a first channel for transmission of packets to a first multicast address and broadcasting a first message pertaining to said first channel and said first multicast address;

b) acquiring, at a second node attached to said second bus system, a second channel for transmission of packets to a second multicast address and broadcasting a second message pertaining to said second channel and said second multicast address;

c) receiving, at said first bus bridge, the first and second messages and acquiring a third channel for transfer of packets on said intermediate bus system if the received first and second messages indicate that the multicast addresses contained therein are equal to each other, establishing a connection between a channel identified by the received first message and the acquired third channel, and broadcasting from said first bus bridge a third message pertaining to said third channel;

d) receiving, at said second bus bridge, the first and second messages from said first and second nodes and subsequently receiving said third message from said first bus bridge if the received first and second messages indicate that the multicast addresses contained therein are equal to each other, and establishing a connection between two channels respectively identified by the second and third messages.

9. A packet communication method for a network comprising a plurality of nodes, first and second bus systems to which said nodes are attached, and a bus bridge for performing a transfer of packets between adjacent said first and second bus systems, the method comprising the steps of:

a) acquiring, at a first node attached to said first bus system, a first channel for transmission of packets to a multicast address and broadcasting a first message pertaining to said first channel and said multicast address;

b) acquiring, at a second, receive-only node attached to said bus system, a second channel for reception of packets from the first node in

response to receipt of said first message and broadcasting a second message pertaining to said second channel and said multicast address;

c) receiving, at said bus bridge, the first and second messages and establishing a connection between two channels respectively identified by the received first and second messages if multicast addresses contained therein are equal to each other.

--10. (Amended) The packet communication method of claim 7, wherein the step (c) comprises establishing said connection by converting a channel identifier contained in a multicast packet received on said first channel to a channel identifier identifying said second channel and converting a channel identifier contained in a multicast packet received on said second channel to a channel identifier identifying said first channel.

11. (Amended) The packet communication method of claim 7, wherein said first and second messages further contain first and second bus identifiers respectively identifying said first and second bus systems, and wherein said bus bridge has first and second ports respectively connected to said first and second bus systems, and wherein the step (c) comprises establishing said connection if the bus bridge receives said first message through said first port and said second message through said second port and if said first and second bus identifiers respectively contained in said first and second messages indicate that aid bus bridge is directly connected to said adjacent bus systems.

12. The packet communication method of claim 8, wherein the step (c) comprises:

establishing said connection, at said first bus bridge, by converting a channel identifier contained in a multicast packet received on said first channel to a channel identifier identifying said third channel and converting a channel identifier contained in a multicast packet received on said third channel to a channel identifier identifying said first channel, and

establishing said connection, at said second bus bridge, by converting a channel identifier contained in a multicast packet received on said second channel to a channel identifier identifying said third channel and converting a channel identifier contained in a multicast packet received on said third channel to a channel identifier identifying said second channel.

13. The packet communication method of claim 8, wherein said first and second messages further contain first and second bus identifiers respectively identifying said first and second bus systems, and wherein said first bus bridge has first and second ports respectively connected to said first and intermediate bus systems, and said second bus bridge has first and second ports respectively connected to said intermediate and second bus systems, wherein the step (c) comprises:

establishing said connection, at said first bus bridge, if the first bus bridge receives said first message through said first port and said second message through said second port and if said first and second bus identifiers respectively contained in said first and second messages indicate that the first bus bridge is directly connected to said first bus system, and

establishing said connection, at said second bus bridge, if the second bus bridge receives said first message through said first port and said second

message through said second port and if said first and second bus identifiers respectively contained in said first and second messages indicate that the second bus bridge is directly connected to said second bus system.

14. The packet communication method of claim 6, wherein said first bus bridge is determined as a bridge responsible for acquisition of said third channel depending on relative values of identifiers assigned to said first and second bus bridges.

15. The packet communication method of claim 6, wherein said first bus bridge is determined as a bridge responsible for acquisition of said third channel depending on a random number.

16. A bus bridge for interconnecting a plurality of bus systems of a packet communication network, each of said bus systems including at least one node, wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that said bus bridge establishes a connection between a first channel used in a first bus system of said plurality of bus systems for transmission of packets to a first multicast address and a second channel used in a second bus system of said plurality of bus systems for transmission of packets to a second multicast address if said first and second multicast addresses are equal to each other and said first and second channels have different channel identifiers from each other.

17. A packet communication network comprising a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node

is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said plurality of bus systems, when initiating a multicast packet transmission to a multicast group of the bus system, acquires a channel to be used for said multicast packet transmission and broadcasts a message containing information pertaining to said channel; and

said at least one bus bridge establishes a connection between channels acquired for different bus systems when said message is received from each of said different bus systems.

18. A packet communication network comprising an intermediate bus system connected between first and second bus systems by first and second bus bridges, wherein at least one node is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said bus systems is responsible for acquisition of a channel to be used for multicast packet transmission and broadcasts a message containing information pertaining to said channel and a multicast group when initiating a multicast packet transmission to said multicast group;

said first bus bridge acquires an interconnection channel if there is no node in said intermediate bus system participating in said multicast group and if two of said message having an identical multicast address are received, one from said first bus system and the other from said second bus system,

broadcasts a message pertaining to said interconnection channel and said multicast group and connects a first end of the interconnection channel to the channel acquired for said first bus system; and

said second bus bridge connects a second end of the interconnection channel to the channel acquired for the second bus system when said message is received from said first bus bridge.

19. A packet communication network comprising a plurality of bus systems interconnected by at least one bus bridge, wherein at least one node is attached to each of said bus systems, and wherein said bus systems, said bridge and said node are in compliance to a serial bus standard, characterized in that:

said at least one node attached to each of said plurality of bus systems acquires a first channel to be used for multicast packet transmission and broadcasts a first message containing information pertaining to said first channel and a multicast group when initiating a multicast packet transmission to said multicast group;

said at least one node on each of said bus systems when operating as a receive-only node acquires a second channel if said first message is received when the bus system of the receive-only node has no node responsible for channel acquisition, and broadcasts a second message pertaining to said second channel and said multicast group; and

said at least one bus bridge establishes an inter-channel connection between said first and second channels when said first and second messages are received.

20. The packet communication network of claim 19, wherein said first bus bridge is determined as a bridge responsible for acquisition of said interconnection channel depending on relative values of identifiers assigned to said first and second bus bridges.

21. The packet communication network of claim 19, wherein said first bus bridge is determined as a bridge responsible for acquisition of said interconnection channel depending on a random number.

22. A packet communication network comprising:

a plurality of nodes;

first and second bus systems to which said nodes are attached; and

a bus bridge for performing a transfer of packets between said first and second bus systems;

a first node attached to said first bus system acquiring a first channel for transmission of packets to a first multicast address and broadcasting a first message pertaining to said first channel and said first multicast address;

a second node attached to the second bus system acquiring a second channel for transmission of packets to a second multicast address and broadcasting a second message pertaining to said second channel and said second multicast address,

said bus bridge receiving the first and second messages and establishing a connection between two channels respectively identified by the received messages if the multicast addresses contained therein are equal to each other.

23. A packet communication network comprising:

first and second bus systems and an intermediate bus system between said first and second bus systems;

a plurality of nodes attached to said first, second and intermediate bus systems;

a first bus bridge for performing a transfer of packets between said first and intermediate bus systems;

a second bus bridge for performing a transfer of packets between said intermediate and second bus systems;

a first node attached to said first bus system acquiring a first channel for transmission of packets to a first multicast address and broadcasting a first message pertaining to said first channel and said first multicast address,

a second node attached to said second bus system acquiring a second channel for transmission of packets to a second multicast address and broadcasting a second message pertaining to said second channel and said second multicast address,

said first bus bridge receiving the first and second messages, acquiring a third channel for transfer of packets on said intermediate bus system if the received messages indicate that the multicast addresses contained therein are equal to each other, establishing a connection between a channel identified by the received first message and the acquired third channel, and broadcasting a third message pertaining to said third channel,

said second bus bridge receiving the first and second messages, and subsequently receiving said third message if the received first and second messages indicate that the multicast addresses contained therein are equal to each other, and establishing a connection between two channels respectively

identified by the second and third messages.

24. A packet communication network comprising:

a plurality of nodes;

first and second bus systems to which said nodes are attached; and

a bus bridge for performing a transfer of packets between adjacent said first and second bus systems,

a first node attached to said first bus system acquiring a first channel for transmission of packets to a multicast address and broadcasting a first message pertaining to said first channel and said multicast address,

a second, receive-only node attached to said bus system acquiring a second channel for reception of packets from the first node in response to receipt of said first message and broadcasting a second message pertaining to said second channel and said multicast address,

said bus bridge receiving the first and second messages and establishing a connection between two channels respectively identified by the received first and second messages if multicast addresses contained therein are equal to each other.

25. (Amended) The packet communication network of claim 22, wherein said bus bridge establishes said connection by converting a channel identifier contained in a multicast packet received on said first channel to a channel identifier identifying said second channel and converting a channel identifier contained in a multicast packet received on said second channel to a channel identifier identifying said first channel.

26. (Amended) The packet communication network of claim 22, wherein said first and second messages further contain first and second bus identifiers respectively identifying said first and second bus systems, and wherein said bus bridge has

first and second ports respectively connected to said first and second bus systems and establishes said connection if the bus bridge receives said first message through said first port and said second message through said second port, and if said first and second bus identifiers respectively contained in said first and second messages indicate that said bus bridge is directly connected to said adjacent bus systems.--

28. The packet communication network of claim 23, wherein said first and second messages further contain first and second bus identifiers respectively identifying said first and second bus systems, and wherein said first bus bridge has first and second ports respectively connected to said first

and intermediate bus systems, and said second bus bridge has first and second ports respectively connected to said intermediate and second bus systems,

wherein each of said first and second bus bridges establishes said connection if the bus bridge receives said first message through said first port and said second message through said second port, and if said first and second bus identifiers respectively contained in said first and second messages indicate that the first and second bus bridges are directly connected to said first and second bus systems, respectively

29. The packet communication network of claim 23, wherein said first bus bridge is determined as a bridge responsible for acquisition of said third channel depending on relative values of identifiers assigned to said first and second bus bridges.

30. The packet communication network of claim 23, wherein said first bus bridge is determined as a bridge responsible for acquisition of said third channel depending on a random number.